UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,381	11/26/2001	Alfred Schwandner	100-965	7270

35236 7590 12/03/2004

THE CULBERTSON GROUP, P.C.
1114 LOST CREEK BLVD.
SUITE 420
AUSTIN, TX 78746

EXAMINER	
KIM, DAVID S	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 12/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/994,381	SCHWANDNER ET AL.	
	Examiner	Art Unit	
	David S. Kim	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 November 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because they do not include descriptive labels for the generic boxes employed therein. Also, the generic boxes are not shaped in any known distinguishing manner to indicate their function and/or content.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. **Claims 14** is objected to because of the following informalities:

In claim 14, "receiving the signal" is used where -- receiving the reception signal -- may be intended. Otherwise, antecedent basis for this "signal" is unclear due to the number of other types of signals in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Levin et al.

4. **Claims 1-4, 6-13, and 15-18** are rejected under 35 U.S.C. 102(b) as being anticipated by Levin et al. (U.S. Patent No. 4,994,675, hereinafter "Levin").

Regarding claim 1, Levin discloses:

A method of checking the operativeness of an optical transmission link wherein, after line trouble or interruption of transmission

a) a first signal transmission device (POINT A in Fig. 3) transmits a test signal (XX Test Signal) to a second signal transmission device (POINT B) via said transmission link (17), and

b) said second signal transmission device sends back a response signal (XX,YY Backhaul Signal) to said first signal transmission device via said transmission link when it has received said test signal, and

c) said first signal transmission device evaluates at least one property (e.g., codes; col. 4, l. 30-40) of said response signal and compares it with a set value or range of set values for the at least one property known to the device, and

d) if a complete or sufficient correspondence of the at least one property evaluated with the predetermined set value or range of set values is detected, recognizes the operativeness of the signal transmission link and starts with the transmission of the signal to be sent (abstract),

characterized in that

e) said test signal and said response signal differ from each other with respect to the at least one property evaluated (e.g., codes; col. 4, l. 30-40).

Regarding claim 2, Levin discloses:

A method according to claim 1, characterized in that said at least one property is the duration of the response signal (included in that the duration of XX differs from the duration of XX,YY).

Regarding claim 3, Levin discloses:

A method according to claim 2, characterized in that the duration of the response signal is longer than that of the test signal (XX,YY is longer than XX).

Regarding claim 4, Levin discloses:

A method according to claim 1, characterized in that said at least one property is a bit pattern of said response signal (XX differs from XX,YY).

Regarding claim 6, Levin discloses:

A method according to one of claims 1 to 4, characterized in that said response signal is only sent back after reception and evaluation of the test signal received (note reception and evaluation of test signal in POINT B).

Regarding claim 7, Levin discloses:

A method according to claim 6, characterized in that said first signal transmission device sends a response signal (A to B information signal in col. 7, l. 16-19) to said second signal transmission device before the transmission of a signal to be sent is started (B to A information signal in col. 7, l. 20-23).

Regarding claim 8, Levin discloses:

A method according to one of claims 1 to 7, characterized in that said test signal is only emitted if a signal to be transmitted by said signal transmission device is present (e.g., XX Test Signal is only emitted if it is present to be transmitted).

Regarding claim 9, Levin discloses:

A method according to claim 8, characterized in that said test signal or said response signal consists of fragments of the signal to be transmitted (e.g., XX Test Signal consists of fragments of itself).

Regarding claim 10, Levin discloses:

A transmitting and receiving device, particularly an optical converter or repeater amplifier, for optical data transmission,

a) comprising an optical transmitting unit (transmitter 15 in Fig. 3) which converts the electric signals into optical signals and which can be connected with a signal transmission link with the output port thereof and

b) comprising an optical receiving unit (receiver 33) which converts optical signals into electric signals and which can be connected with a signal transmission link with the input port thereof and

c) comprising an evaluation and control unit (decision logic and monitor 39 in POINT A) which evaluates a signal provided by the optical receiving unit or by a monitoring unit and which triggers the optical transmitting unit, wherein said evaluation and control unit

c1) evaluates (col. 7, l. 24-37) the signal provided with respect to the existence of line trouble in said transmission link and, in case line trouble is detected, initiates a check mode of the transmitting and receiving device, wherein, in the check mode, said evaluation and control unit

c11) triggers said optical transmitting unit at given points of time in such a way that the latter sends a test signal (e.g., XX Test Signal) to a second optical

receiving unit (receiver 18) of a second transmitting and receiving device (POINT B) via said transmission link, and

c12) evaluates a response signal (e.g., XX,YY Backhaul Signal) expected from a second optical transmitting unit (transmitter 30) of said second transmitting and receiving device as a reaction to said test signal to see whether this response signal corresponds to a predetermined set value or range of set values with respect to at least one property to be evaluated (e.g., codes; col. 4, l. 30-40), and

c13) if a complete or sufficient correspondence of said at least one property evaluated with the predetermined set value or range of set values is detected, recognizes the operativeness of said signal transmission link (col. 7, l. 7-15), and

c2) if the operativeness is recognized, triggers said optical transmitting unit in such a way that the latter makes it possible to send a signal which is present or to be emitted (col. 7, l. 16-19),

characterized in that

d) said test signal and said response signal differ from each other with respect to said at least one property evaluated (e.g., codes; col. 4, l. 30-40).

Regarding claim 11, Levin discloses:

A transmitting and receiving device according to claim 10, characterized in that said at least one property of said response signal emitted by said transmitting unit is the duration thereof (included in that the duration of XX differs from the duration of XX,YY).

Regarding claim 12, Levin discloses:

A transmitting and receiving device according to claim 11, characterized in that the duration of said response signal emitted by said transmitting unit is longer than that of said test signal emitted by said transmitting unit (XX,YY is longer than XX).

Regarding claim 13, Levin discloses:

A transmitting and receiving device according to claim 10, characterized in that said at least one property of said response signal emitted by said transmitting unit is the bit pattern thereof (XX differs from XX,YY).

Regarding claim 15, Levin discloses:

A transmitting and receiving device according to one of claims 10 to 13, characterized in that said transmitting and receiving device, which receives a signal with its receiving unit, only sends back said response signal via the respective transmitting unit after it has received and evaluated a test signal (note reception and evaluation of test signal in POINT B).

Regarding claim 16, Levin discloses:

A transmitting and receiving device according to claim 15, characterized in that, before the transmission of the signal to be sent is started (B to A information signal in col. 7, l. 20-23), said transmitting unit sends a response signal (A to B information signal in col. 7, l. 16-19) to a second signal transmission device.

Regarding claim 17, Levin discloses:

A transmitting and receiving device according to one of claims 10 to 16, characterized in that the respective transmitting unit only emits said test signal if a signal to be transmitted by said transmitting and receiving device is present (e.g., XX Test Signal is only emitted if it is present to be transmitted).

Regarding claim 18, Levin discloses:

A transmitting and receiving device according to claim 17, characterized in that said test signal or said response signal is created by the evaluation and control unit triggering the

respective transmitting unit in such a way that the latter emits said test signal or said response signal as a part of a signal to be emitted (e.g., test signal is sent along with A to B information signal in col. 7, l. 24-37).

Andersson et al.

5. **Claims 1-18** are rejected under 35 U.S.C. 102(b) as being anticipated by Andersson et al. (U.S. Patent No. 5,771,114, hereinafter "Andersson").

Regarding claim 1, Andersson discloses:

A method of checking the operativeness of an optical transmission link wherein, after line trouble or interruption of transmission

a) a first signal transmission device (power module 16 in Figures) transmits a test signal (block pulses in waveform 130 in Fig. 3) to a second signal transmission device (interface module 20 in Figures) via said transmission link (fibers 18, 290 and 292), and

b) said second signal transmission device sends back a response signal (return safety pulse 136 in Fig. 3) to said first signal transmission device via said transmission link when it has received said test signal, and

c) said first signal transmission device evaluates at least one property (any distinguishing property of return safety pulse 136, such as length, col. 6, l. 12-15) of said response signal and compares it with a set value or range of set values for the at least one property known to the device, and

d) if a complete or sufficient correspondence of the at least one property evaluated with the predetermined set value or range of set values is detected, recognizes the operativeness of the signal transmission link and starts with the transmission of the signal to be sent (col. 6, l. 15-19),

characterized in that

e) said test signal and said response signal differ from each other with respect to the at least one property evaluated (e.g., length, col. 6, l. 12-15).

Regarding claim 2, Andersson discloses:

A method according to claim 1, characterized in that said at least one property is the duration of the response signal (duration of return safety pulse 136 differs from the duration of low power mode pulses 132 in Fig. 3).

Regarding claim 3, Andersson discloses:

A method according to claim 2, characterized in that the duration of the response signal is longer than that of the test signal (return safety pulse 136 is longer than low power mode pulses 132 in Fig. 3).

Regarding claim 4, Andersson discloses:

A method according to claim 1, characterized in that said at least one property is a bit pattern of said response signal (the bit pattern of return safety pulse 136 is different from the bit pattern of block pulses in waveform 130 in Fig. 3).

Regarding claim 5, Andersson discloses:

A method according to one of claims 1 to 4, characterized in that said response signal is sent back immediately at the beginning of a reception signal detected (col. 5, l. 62-65).

Regarding claim 6, Andersson discloses:

A method according to one of claims 1 to 4, characterized in that said response signal is only sent back after reception and evaluation of the test signal received (note that block pulses in waveform 130 in Fig. 3 are received and evaluated by capacitor 204 and detector 206 in Fig. 5).

Regarding claim 7, Andersson discloses:

A method according to claim 6, characterized in that said first signal transmission device sends a response signal (in response to return safety pulse 136, power module 16 sends

waveform 138 in Fig. 3 to interface module 20) to said second signal transmission device before the transmission of a signal to be sent is started (e.g., digital message 160 in Fig. 4).

Regarding claim 8, Andersson discloses:

A method according to one of claims 1 to 7, characterized in that said test signal is only emitted if a signal to be transmitted by said signal transmission device is present (e.g., return safety pulse 136 is only emitted if it is present to be transmitted).

Regarding claim 9, Andersson discloses:

A method according to claim 8, characterized in that said test signal or said response signal consists of fragments of the signal to be transmitted (e.g., return safety pulse 136 consists of fragments of itself).

Regarding claim 10, Andersson discloses:

A transmitting and receiving device, particularly an optical converter or repeater amplifier, for optical data transmission,

a) comprising an optical transmitting unit (laser diode 108 in Figures) which converts the electric signals into optical signals and which can be connected with a signal transmission link with the output port thereof and

b) comprising an optical receiving unit (photodetector 116 in Figures) which converts optical signals into electric signals and which can be connected with a signal transmission link with the input port thereof and

c) comprising an evaluation and control unit (microprocessor 104 in Fig. 2) which evaluates a signal provided by the optical receiving unit or by a monitoring unit and which triggers the optical transmitting unit, wherein said evaluation and control unit

c1) evaluates (e.g., col. 6, l. 50-53) the signal provided with respect to the existence of line trouble in said transmission link and, in case line trouble is detected,

initiates a check mode of the transmitting and receiving device, wherein, in the check mode, said evaluation and control unit

c11) triggers said optical transmitting unit at given points of time in such a way that the latter sends a test signal (e.g., block pulses in waveform 130 in Fig. 3) to a second optical receiving unit (power converter 200 in Figures) of a second transmitting and receiving device (interface module 20 in Figures) via said transmission link, and

c12) evaluates a response signal (return safety pulse 136) expected from a second optical transmitting unit (power converter 200/LED 294 in Figures) of said second transmitting and receiving device as a reaction to said test signal to see whether this response signal corresponds to a predetermined set value or range of set values with respect to at least one property to be evaluated (any distinguishing property of return safety pulse 136, such as length, col. 6, l. 12-15), and

c13) if a complete or sufficient correspondence of said at least one property evaluated with the predetermined set value or range of set values is detected, recognizes the operativeness of said signal transmission link (col. 6, l. 2-5), and

c2) if the operativeness is recognized, triggers said optical transmitting unit in such a way that the latter makes it possible to send a signal which is present or to be emitted (col. 6, l. 15-19),

characterized in that

d) said test signal and said response signal differ from each other with respect to said at least one property evaluated (e.g., length, col. 6, l. 12-15).

Regarding claim 11, Andersson discloses:

A transmitting and receiving device according to claim 10, characterized in that said at least one property of said response signal emitted by said transmitting unit is the duration thereof (duration of return safety pulse 136 differs from the duration of low power mode pulses 132 in Fig. 3).

Regarding claim 12, Andersson discloses:

A transmitting and receiving device according to claim 11, characterized in that the duration of said response signal emitted by said transmitting unit is longer than that of said test signal emitted by said transmitting unit (return safety pulse 136 is longer than low power mode pulses 132 in Fig. 3).

Regarding claim 13, Andersson discloses:

A transmitting and receiving device according to claim 10, characterized in that said at least one property of said response signal emitted by said transmitting unit is the bit pattern thereof (the bit pattern of return safety pulse 136 is different from the bit pattern of block pulses in waveform 130 in Fig. 3).

Regarding claim 14, Andersson discloses:

A transmitting and receiving device according to one of claims 10 to 13, characterized in that, immediately at the beginning of reception of a reception signal detected (col. 5, l. 62-65), said transmitting and receiving device receiving the signal sends back said response signal with the corresponding transmitting unit.

Regarding claim 15, Andersson discloses:

A transmitting and receiving device according to one of claims 10 to 13, characterized in that said transmitting and receiving device, which receives a signal with its receiving unit, only

sends back said response signal via the respective transmitting unit after it has received and evaluated a test signal (note that block pulses in waveform 130 in Fig. 3 are received and evaluated by capacitor 204 and detector 206 in Fig. 5).

Regarding claim 16, Andersson discloses:

A transmitting and receiving device according to claim 15, characterized in that, before the transmission of the signal to be sent is started (e.g., digital message 160 in Fig. 4), said transmitting unit sends a response signal (in response to return safety pulse 136, power module 16 sends waveform 138 in Fig. 3 to interface module 20) to a second signal transmission device.

Regarding claim 17, Andersson discloses:

A transmitting and receiving device according to one of claims 10 to 16, characterized in that the respective transmitting unit only emits said test signal if a signal to be transmitted by said transmitting and receiving device is present (e.g., return pulse 136 is only emitted if it is present to be transmitted).

Regarding claim 18, Andersson discloses:

A transmitting and receiving device according to claim 17, characterized in that said test signal or said response signal is created by the evaluation and control unit triggering the respective transmitting unit in such a way that the latter emits said test signal or said response signal as a part of a signal to be emitted (e.g., block pulses 132 are part of the signal train in waveform 130 in Fig. 3).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claims 5 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Levin.

Regarding claim 5, Levin does not expressly disclose:

A method according to one of claim 1 to 4, characterized in that said response signal is sent back immediately at the beginning of a reception signal detected.

However, Levin broadly teaches that said response signal (XX,YY Backhaul Signal) is sent back while a test signal (XX Test Signal) is *continually* sent (col. 7, l. 24-37). That is, after a first instance of this test signal is received and processed, said response signal is sent back (col. 6, l. 66 – col. 7, l. 6). This *continual* sending implies that a second (and a third and a fourth, etc.) instance of this test signal is sent and detected. Although Levin does not discuss in detail the timing scheme of the sending and detecting of these instances of this test signal and said response signal, Examiner notes that any appropriate timing scheme would suffice. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to notice that one such appropriate and intuitive timing scheme would be to send back said response signal immediately at the beginning of a reception signal (second instance of this test signal) detected. One of ordinary skill in the art would have been motivated to do this it intuitively provides an appropriate timing scheme with some benefits. On one hand, if said response signal is sent back *before* the beginning of this second instance of this test signal detected, there is a time lag during which the status of the transmission link is unknown and

pending. On the other hand, if said response signal is sent back *after* the beginning of this second instance of this test signal detected, additional memory is likely required to store this second (and third and fourth, etc.) instance of the test signal for later processing of a second instance (and third and fourth, etc.) of the said response signal. Sending back said response signal *immediately* at the beginning of this second instance of this test signal detected avoids said time lag and said additional memory. Additionally, Examiner reiterates that any appropriate timing scheme would suffice and the teaching of Levin is broad enough to cover the scope of the limitations of claim 5. At the very least, implementing this timing scheme is one of many obvious timing schemes that fall within the design choice bounds of Levin.

Regarding claim 14, claim 14 introduces limitations that correspond to the limitations introduced by claim 5. An obviousness argument is applied to address these limitations in claim 5. Similarly, the same obviousness argument is applied to address the corresponding limitations in claim 14.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DSK

JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600